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June 24, 2016

<u>**VIA ELECTRONIC SUBMISSION**</u>

Mr. Christopher J. Kirkpatrick
Secretary of the Commission
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, NW
Washington, DC 20581

**Re: Public Staff Roundtable on Elements of Regulation Automated Trading: Source Code Access
          and Retention**

Dear Mr. Kirkpatrick:

I.   INTRODUCTION

On behalf of the Modern Markets Initiative ("MMI")[1], I respectfully submit this letter in response to the reopening of the comment period for the Commodity Futures Trading Commission's (the "CFTC" or "Commission" or "Agency") Notice of Proposed Rulemaking on Regulation Automated Trading (the "Regulation AT" or "Proposal")[2] to address agenda items presented at the Public Staff Roundtable on Elements of Regulation Automated Trading. Our comments are confined to the 'source code access and retention' agenda item.

As previously stated, MMI stands in broad support of the CFTC's proactive efforts to codify industry best practices and enforce high standards for automated trading. However, the Agency's Proposal to move source code inspection from a judicial process to books and records provisions (Commission Regulation 1.31) unduly imperils sensitive intellectual property and violates the Fourth Amendment.

In the following comments, we include: (A) a discussion of intellectual property and the Fourth Amendment rights of source code owners; (B) a proposed regulatory treatment of source code (as an alternative to the proposed books and records treatment); and (C) information pertaining to definitions of "source code" and elements of an "algorithmic trading system."

II.   COMMENTS

A.   ACCESS AND RETENTION OF INTELLECTUAL PROPERTY AND TRADE SECRETS

In the U.S., source code is protected by strict copyright law and often enjoys the further protections of trade secret law conferred on products that derive economic benefit by virtue of not being widely known.[3] Shifting regulatory

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[1] MMI is an industry association dedicated to investor education and fact-based advocacy regarding high frequency trading ("HFT"). MMI provides comments regarding regulatory and legislative developments from the perspective of globally-respected HFT firms working daily to serve investors and end users with reliable market liquidity across asset classes creating optimum price discovery.

[2] *See* Notice of Public Staff Roundtable on Elements of Regulation Automated Trading; Reopening of Comment Period, 81 FR 36484 (June 7, 2016), *available at* http://www.cftc.gov/idc/groups/public/@lrfederalregister/documents/file/2016-13385a.pdf

[3] *See* Lilith Games (Shanghai) Co. v. uCool, Inc., 2015 WL 4128484, at *5 (N.D. Cal. July 08, 2015).

access to source code from the strictures of judicial procedure raises myriad legal issues, including, but not limited to, protections related to trade secrets, privacy, intellectual property, copyright, and regulatory takings. These matters also may create added liability for the Commission, and potentially for automated trading firms.

Absent a valid exception to the Fourth Amendment, requiring firms to provide source code without the protections of a subpoena constitutes an unlawful seizure of protected intellectual property.

Source code is confidential and indicative of a firm's current and future trading strategies. It has historically been obtained by legal inquiry to perform forensic analysis of market disruptions to assess actions and actors. We can think of no other circumstance where market participants have been required to reveal, to a regulator, their thoughts, words or actions regarding future automated or manual trading intent. The approval of section § 1.81(a) would not only establish legal and civil precedent, it would impose a unique regulatory burden centered on algorithmic trading.

MMI is concerned the Proposed Rule requiring the production of sensitive source code information from algorithmic traders would give rise to unnecessary and substantial risks to market participants, negatively impact the efficiency and competitiveness of markets, and could legally be ruled arbitrary and capricious for several reasons:

- **Government Interest.** The benefit and government interest in the use of such information is not clearly expressed nor explained by the Commission. As noted above, there is no prescribed Commission authority to even request such information (absent a subpoena). There is no detailed justification nor explanation as to the potential use of such code, nor any appropriate particulars related to Agency storage and analysis. Such a requirement is unnecessary because subpoena powers already exist to demand certain information from market participants. The proposed requirement of section § 1.81(a), therefore, creates legal uncertainties and would serve to circumvent the subpoena process.

- **Code Market Implications.** The Proposal does not reflect the reality of how contemporary market mechanisms work together. Viewed by itself, such code would not provide a thorough interpretation of any potential market interactions because there are an exponential number of variables informing and continuously steering the source code.

- **Cybersecurity Concerns**. There are numerous concerns related to the protection of source code and algorithms that could potentially be requested by regulators. The security and the integrity of source code and algorithms need to be protected against cyber hacks and data breaches. There is a concern about the integrity and security of the Commission's systems (i.e., the 2012 CFTC hacking). Recently, on June 14, 2016, a Chinese software developer was charged with stealing source code–a key component of some of the world's largest scientific supercomputers–from a US company in order to benefit the Chinese government.[4] We appreciate comments by the Commission that it routinely handles confidential information without incident, but this is different than reviewing order/trade blotters, e-mail and internal accounting documents. A breach of source code could be exceedingly more destructive, if not terminal, for firms.

In sum, the costs associated with creating a new regulatory requirement and the risks associated to the disclosure of such information to regulators (and perhaps inadvertently to the public) defy an acceptable cost-benefit analysis

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[4] Maria Armental, *U.S. Accuses Chinese Software Developer of Stealing Source Code*, WALL STREET JOURNAL (June 14, 2016), *available at* http://www.wsj.com/articles/u-s-accuses-chinese-software-developer-of-stealing-source-code-1465947536

of the proposed section § 1.81(a). Such legally-protected property related to coding is the lifeblood of many firms. It is their "secret formula" just like the ingredients in Coca-Cola.

B.   REGULATORY ALTERNATIVE TO PROPOSED SOURCE CODE ACCESS

As an alternative approach, we propose that the Commission and firms should work together to formulate prescriptive source code retention standards that would enable firms to continue housing source code on their own premises while ensuring that source code is readily accessible and available when validly requested by the Commission, subject to a subpoena. Such an approach could be overseen using the same or similar approach by the Financial Industry Regulatory Authority (FINRA), which has issued guidance on effective supervision and control practices for firms engaging in algorithmic trading strategies (ATS). Among other guidance, FINRA Regulatory Notice 15-09[5] sets forth standards for archiving code versions in a retrievable manner, maintaining a basic summary description of code, establishing pre and post-implementation procedures for code, implementing security measures to limit code access and control system entitlements. A similar FINRA-like approach could be utilized by the CFTC. The details of any such standards could be further developed by a working group of firms in consultation with Commission staff.

We believe all traders using computer methods should have proper supervision and control practices and procedures in place for systems development, testing and deployment. The importance of this can be seen by considering an example widely cited as a reason for regulatory access to algorithmic trading source code. In 2012, human error in deploying new code caused a Knight Capital system to generate $440 million in trading losses in 45 minutes. Yet in this case, the algorithm itself was not the cause of the malfunction. The SEC found[6] that 1) Knight technicians did not deploy new code to a critical server, 2) Knight did not have a second technician review the deployment, and 3) Knight had no written procedures that required such a review. Since then, FINRA enacted Regulatory Notice 15-09 that requires "employing redundant or multiple system validations before introducing new or materially changed code into production." These and other measures in the Notice ensure operational stability and serve as an appropriate alternative to requiring unfettered access to source code.

C.   DEFINING SOURCE CODE

MMI continues to believe that greater clarity is needed for the definition of "source code," which is neither explained nor defined in the Proposal. There is no legal or codified definition of source code under national and international financial law and regulation. Without consensus on a standardized definition of source code within the industry, the Proposal's request for production code would result in enormous confusion and uncertainty. Furthermore, as discussed below, source code, viewed by itself, would not provide a thorough interpretation of any potential market interactions since there are an exponential number of variables informing and continuously steering the source code.

Adopting a final Regulation AT rule without appropriate public comment or debate would likely generate litigation under the Government in the Sunshine Act.[7] One avenue to endeavor to alleviate this concern would be to have an additional staff Roundtable directly addressing the source code matter, which would include, but not

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[5] Guidance on Effective Supervision and Control Practices for Firms Engaging in Algorithmic Trading Strategies, *available at* http://www.finra.org/industry/notices/15-09

[6] SECURITIES EXCHANGE ACT OF 1934 Release No. 70694 / October 16, 2013 ADMINISTRATIVE PROCEEDING File No. 3-15570 In the Matter of Knight Capital Americas LLC Respondent, Page 6, Paragraph 15, *available at* https://www.sec.gov/litigation/admin/2013/34-70694.pdf

[7] 5 U.S.C. § 552b.

be limited to, a discussion of the definition of such. We respectfully urge the Commission to do so and would welcome participating in any such venue.

What software or hardware components should be included within the term "Algorithmic Trading system"

We should note that there are different stages or levels of programming. The "source code" is the code that a programmer would use to instruct the computer. The "object code" is an intermediate stage into which the computer compiles the source code. Object code for different functions are linked together to form code libraries and executable programs. Finally, the "executable code" is the actual machine-language instructions that the computer executes after compiling and linking. Neither object code nor executable code is normally writable nor readable by human beings.

Our concern in not defining the term source code, is defining what modules, subsystems, utilities, databases, and operating systems would be included as part of "source code." We believe that unless all of the above are included, even the engineers who wrote the code would be incapable of analyzing the subtle interactions between them that may lead to actionable trading behavior. In order to fully answer the question as to what is source code and what are the different elements, it would be helpful to understand the scope of what the Commission is seeking and what the Commission believes are the necessary components of a source code.

III. **CONCLUSION**

The U.S. is a leader in providing the legal and civil protections that attract innovators from around the world. In fact, the Commerce Department estimates that intellectual property-intensive industries create about 40 million jobs and contribute more than $5 trillion dollars, or 34.8 percent, to our gross domestic product[8].

This Proposed Rule threatens to erode confidence in our country's resolve to uphold the regulatory standards that protect the innovation that drives much of our economy. We believe granting a government agency the ability to bypass due process to access confidential and highly sensitive trade secrets in this Proposed Rule has not been presented in an appropriately comprehensive manner. It should be reconsidered, in conjunction with industry professionals, to develop the proper budgetary, legal and operational framework necessary to fortify the markets, protect source code and preserve company secrets.

We appreciate the Commission's efforts to address concerns regarding Regulation AT by reopening the comment period and holding the Roundtable. We realize that on some issues such as source code there may still be more questions than answers and welcome the opportunity to further serve as a resource to CFTC staff as they examine this issue in the future.

If you have any questions, please contact me.

Respectfully submitted,

William R. Harts
Chief Executive Officer
Modern Markets Initiative

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[8] Intellectual Property and the US Economy (March 2012) *available at* http://www.uspto.gov/sites/default/files/news/publications/IP_Report_March_2012.pdf